ADEQ Arizona Department of Environmental Quality

SITE INVESTIGATION REPORT FORM

FOR A TYPE 4.02 TO 4.23 GENERAL PERMIT FOR ON-SITE WASTEWATER TREATMENT FACILITY

OVERVIEW

The purpose of this form is to summarize the results of a site investigation conducted under A.A.C. R18-9-A310. This form must be submitted in conjunction with a "Notice of Intent to Discharge for an On-site Wastewater Treatment Facility" in accordance with Arizona Administrative Code (A.A.C.) R18-9-A309(B)(1). The report includes the following information:

A) Results from any soil evaluation, percolation test, or seepage pit performance test;
B) Any surface limiting condition identified in R18-9-A310(C)(2); and
C) Any subsurface limiting condition identified in R18-9-A310(D)(2).

GENERAL INFORMATION

1 Project Identification (if known)

Project Name

2 Person Authorizing this Site Investigation pursuant to A.A.C. R18-9-A310

Name _____ Phone _____

Title _____ Firm Name _____

Mailing Address _____ City _____ State _____

Zip _____ E-Mail _____

3 Site Information

County _____ City _____

Parcel Number _____ Lot Number _____

Township _____ Range _____ Section _____ _____

Latitude _____ º _____ ‘ _____ “ N _____ Longitude _____ º _____ ‘ _____ “ W

SITE INVESTIGATION REPORT (ITEMS 4 THROUGH 12 AND APPLICABLE ATTACHMENTS ARE TO BE COMPLETED BY THE SITE INVESTIGATOR)

4 Surface Characterization Method [A.A.C. R18-9-A310(C)(1)]

A) ASTM D5879-95 used? ☐ Yes ☐ No

5 Surface Limiting Conditions [A.A.C. R18-9-A310(C)(2)]

The investigator shall determine whether, and if so, where any of the following surface limiting conditions exist:

A) The surface slope is greater than 15 % at the intended location of the on-site wastewater facility ☐ Yes ☐ No
B) Minimum setback distances are not within the limits specified in R18-9-A312(C); ☐ Yes ☐ INDETERMINATE* ☐ No
   * Note: Check INDETERMINATE if the location or size of the dwelling or other improvements, or the bedroom count or the fixture unit count is NOT KNOWN TO THE PERSON PERFORMING THE SITE INVESTIGATION.
C) Surface drainage characteristics at the intended location of the on-site wastewater treatment facility could adversely affect the ability of the facility to function properly; ☐ Yes (If Yes, please describe in Attachment 4) ☐ No
D) A 100-year flood hazard zone, as indicated on the applicable flood insurance rate map, is located within the property on which the on-site wastewater treatment facility will be installed; ☐ Yes ☐ No (If Yes, please specify the FEMA Flood Insurance Map Number or Other Source_____)
E) An outcropping of rock that cannot be excavated exists in the intended location of the on-site wastewater treatment facility or could impair the function of soil receiving the discharge; ☐ Yes ☐ No
F) Fill material deposits exist in the intended location of the on-site wastewater treatment facility ☐ Yes ☐ No.

IF THE ANSWER IS YES OR INDETERMINATE TO ANY OF THE ABOVE SURFACE LIMITING CONDITIONS, PLEASE SHOW LOCATION AND NOTE THE ASSOCIATED LIMITING CONDITION TYPE ON SITE INVESTIGATION MAP (ITEM 8).

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6 Subsurface Characterization Method [A.A.C. R18-9-A310(D)]

Method used to perform subsurface characterization per A.A.C. R18-9-A310(D)(1) and (3)

A) ASTM D5921 used? ☐ Yes ☐ No (if Yes, please enclose Attachment 1)
B) Percolation test method used? ☐ Yes ☐ No (if Yes, please enclose Attachment 2)
C) Seepage performance test method used? ☐ Yes ☐ No (if Yes, please enclose Attachment 3)
D) Other ADEQ approved method? ☐ Yes ☐ No (if Yes, please describe method and enclose Attachment 4)

7 Subsurface Limiting Conditions [A.A.C. R18-9-A310(D)(2)]

The investigator shall determine whether any of the following limiting conditions exist in the primary and reserve areas of the on-site wastewater treatment facility to a depth of at least 12 feet below land surface or to an impervious soil or rock layer if encountered at a shallower depth:

A) The soil absorption rate determined under A.A.C. R18-9-A312(D)(2) is:
   1. More than 1.20 gallons per day per square foot? ☐ Yes ☐ No
   2. Less than 0.20 gallons per day per square foot? ☐ Yes ☐ No
   3. A site-specific soil absorption rate (SAR) is required per A.A.C. R18-9-A312(D)(2)(b)? ☐ Yes ☐ No
B) The vertical separation distance from the bottom of the lowest point of the disposal works to the seasonal high water table is less than the minimum vertical separation specified in A.A.C. R18-9-A312(E)(1)? ☐ Yes ☐ No
C) Does seasonal saturation occur within surface soils that could affect the performance of the on-site wastewater treatment facility? ☐ Yes ☐ No If Yes, describe evidence:

_____

D) Do any of the following subsurface limiting conditions that may cause or contribute to surfacing of wastewater occur within 12 feet of the land surface:
   1. An impervious soil or rock layer? ☐ Yes ☐ No
   2. A zone of saturation that substantially limits downward percolation from the disposal works? ☐ Yes ☐ No
   3. Soil with more than 50 percent rock fragments? ☐ Yes ☐ No
E) Do any of the following subsurface limiting conditions that may promote accelerated downward movement of insufficiently treated wastewater occur within 12 feet of the land surface:
   1. Fractures or joints in rock that are open, continuous, or interconnected? ☐ Yes ☐ No
   2. Karst voids or channels? ☐ Yes ☐ No
   3. Highly permeable materials such as deposits of cobbles or boulders? ☐ Yes ☐ No
F) Does a subsurface condition exist that may convey wastewater to a Water of the State and cause or contribute to an exceedance of a water quality standard established in 18 A.A.C. 11, Articles 1 and 4? ☐ Yes ☐ No
G) Depth to groundwater below land surface _____ feet.
   Please check below the method used.
   ☐ Trench or boring, ☐ Subdivision report,
   ☐ Published groundwater data, ☐ Relevant well data.

IF THE ANSWER IS YES TO ANY OF THE ABOVE SUBSURFACE LIMITING CONDITIONS, PLEASE SHOW LOCATION AND NOTE THE ASSOCIATED LIMITING CONDITION TYPE ON SITE INVESTIGATION MAP (ITEM 8).

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8 Site Investigation Map (Show locations of limiting conditions, features and improvements)

The Site Investigation Map may be shown below on the Grid **OR** on an Attachment. The Map shall show:

A) The property boundaries, a North arrow, soil test sites, and the positions of limiting conditions noted in Items 5 and 7;

B) All observed conditions or features specified in A.A.C. R18-9-A312(C) are shown with the planned separation distance shown in feet (please circle below the **"N"** for each potential limiting condition that is Not Observed or Not Determined and THEREFORE, is not shown in this Site Investigation Map);

N Planned building	**N** Drinking water intake from a surface water source
N Existing building	**N** Water main or branch water line
N Water supply well	**N** Domestic service water line
N Perennial or intermittent stream	**N** Wall or planned wall over 2 feet high
N Lake, reservoir, or canal	**N** Planned cut bank over 2 feet deep
N Pond or other water feature	**N** Driveway, vehicle path, or parking area, existing or planned
N Wash, or drainage easement	**N** Swimming pool, existing or planned
N Boundary of 100-year flood hazard zone	**N** Storage Area - Equipment or material storage area, or other storage

N Other easement **N** Property line or survey corner **N** Earth fissure

AND C) Any other condition or feature observed during the site investigation which may affect on-site system design which is located within the Site Investigation Area (defined as the planned excavation boundaries for the treatment works, primary disposal area and reserve disposal area plus the surrounding area out to 100 feet) including : (1) land surface contours at appropriate intervals when the elevations across this Area differ by more than 5 feet, and (2) any other factor is observed that may affect system design regardless of property ownership (Use an Attachment if it cannot be depicted on the below Grid).

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9 Investigator Information

Name _____ Phone _____

Title _____ Firm Name _____

Mailing Address _____ City _____ State _____

Zip _____ E-Mail _____

10 Investigator Qualification Information [A.A.C. R18090A310(H)] (Must check applicable boxes and provide related information)

A) ☐ Arizona-registered professional engineer Certification Number: _____ Expiration Date: _____

B) ☐ Arizona-registered professional geologist Certification Number: _____ Expiration Date: _____

C) ☐ Arizona-registered sanitarian Registration Number: _____ Expiration Date: _____

D) ☐ A certificate of training from a course recognized by ADEQ

Course Name: _____ Completion Date: _____

E) ☐ Qualifies under another category designated in writing by ADEQ. Specify Category and Approval Date.

Qualification Category: _____ Approval Date: _____

11 Investigator Certification

I have inspected the property identified in Item 3, Site Information, for purposes of performing a site investigation. I have performed this site investigation in accordance with R18-9-A310 and have completed Items 3 through 11 to the best of my knowledge. This Site Investigation report is intended to be submitted in fulfillment of A.A.C.R18-9-A309(B)(1) and includes the following attachments.

#	Attachment Description	Attached?
		☐ Yes, total of pages.
		☐ Yes, total of pages.
		☐ Yes, total of pages.
		☐ Yes, total of pages.

Investigator Name (Printed): _____ Date of Investigation: _____

Investigator Signature: _____ Date Signed: _____

12 Affidavit of Person Authorizing This Site Investigation

I certify that I am the Person authorizing the work certified in Item 11 that has been performed in fulfillment of

A.A.C. R18-9-A310, effective November 12, 2005, for Parcel Number _____

My interest in this Site Investigation as it relates to the installation of an on-site wastewater treatment facility is that (please check all applicable boxes and provide a description, if specified):

☐ I am the Owner of the property described above.

☐ I am the Representative of the Owner, such as a person preparing a submittal pursuant A.A.C. R18-9-A309(B).

☐ Other. Please describe: _____

_____

_____ _____

Signature Date

SPACE FOR REVIEWING AGENCY USE (EACH AGENCY TO EDIT AS NEEDED FOR NOID PROCESSING PROGRAM)

ATTACHMENT 1 – ASTM 5921 METHOD FOR SUBSURFACE SOIL CHARACTERIZATION

Address of Facility _____ Depth to Groundwater **PLEASE REPORT IN ITEM 7.G**

Tested by _____ Parcel Number _____

Date Tested _____

Test ____ Test ____ Test ____ Test ____

Test Hole #	Depth Interval Below Land Surface (Inches)	Texture	Structure	Rock Fragments %	Mottles %	Boundary	Dry Consistency	Moist Consistency	SAR

Comments:

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TEXTURE

Loamy Sand – (LS)
Sandy Loam – (SL)
Silt Loam – (SiL)
Loam – (L)
Sandy Clay Loam – (SCL)
Silty Clay Loam – (SiCL)
Clay Loam – (CL)
Sandy Clay – (SC)
Silty Clay – (SiC)
Clay – (C)

SAND SIZES
Coarse – (Co)
Medium – (M)
Fine – (F)
Very Fine – (VF)

STRUCTURE

GRADE

Structureless	(0)	No aggregation
Weak	(1)	Barely observable
Moderate	(2)	Distinct peds
Strong	(3)	Durable peds

SIZE		Granular, Platy	Angular, Subangular, Blocky	Prismatic, Columnar
Very Fine	(VF)	<1 mm	<5 mm	<10 mm
Fine	(F)	1-2	5-10	10-20
Medium	(M)	2-5	10-20	20-50
Coarse	(C)	5-10	20-50	50-100
Very Coarse	(VC)	>10	>50	>100

SHAPE

Platy	(PL)	Flat, plate-like
Prismatic	(PR)	Taller than wide
--Columnar	(CPR)	Rounded tops
Blocky	(BK)	Cubical
--Angular	(ABK)	Sharp edges
-- Subangular	(SBK)	Rounded edges
Granular	(GR)	Spherical
No Structure		
--Single Grain	(SG)	Sandy texture
-- Massive	(M)	Finer textures

ROCK FRAGMENTS

ROUNDED, SUBROUNDED ANGULAR, IRREGULAR
Gravel – (GR) 2-75 mm
Fine – (FGR) 2-5 mm
Medium– (MGR) 5-20 mm
Coarse – (CGR) 20-75 mm
Pebbles – (PB) 2-75 mm
Fine – (FPB) 2-5 mm
Medium – (MPB) 5-20 mm
Coarse – (CPB) 20-75 mm
Cobbles – (CB) 75-250 mm
Stones – (S) 250-600 mm
Boulders – (B) ≥600 mm

FLAT
Channers – (CH) 2-150 mm
Flagstones – (FL) 150-380 mm
Stones – (ST) 380-600 mm
Boulders – (BO) ≥600 mm

TYPE OF ROCK
Basalt – (BAS)
Cinders – (CIND)
Sandstone – (SST)
Limestone – (LST)

TERMS OF SOIL/ROCK
Cemented – (CEM)
Ice or Frozen – (ICE)
Weathered – (WEA)
Unweathered – (UNWEA)
Fractured – (FRA)
Decomposed – (DEC)
Stratified – (ST)

MOTTLES

QUANTITY
Few (F) -<2%
Common (C) - 2-20%
Many (M) - >20%

SIZE
Fine (1) - <5 mm
Medium (2) - 5 -15 mm
Coarse (3) - >15 mm

CONTRAST
Faint – (F)
Distinct – (D)
Prominent – (P)

NOTE: Report **Soil Color** in **"Comments"** when Mottles are **Common** or **Many**.

BOUNDARY

DISTINCTNESS
Abrupt (A) – Less than 2 cm
Clear (C) – 2 to 5 cm
Gradual (G) – 5 to 15 cm
Diffuse (D) – More than 15 cm

TOPOGRAPHY
Smooth (S) – A plane with few or no irregularities
Wavy (W) – Waves wider than deep
Irregular (I) – Waves deeper than wide
Broken (B) – discontinuous and interrupted

CONSISTENCY

DRY

L = Loose
S = Soft
SH = Slightly Hard
MH = Moderately Hard
VH = Very Hard
H = Hard
R = Rigid
VR = Very Rigid

MOIST

L = Loose
VFR = Very Friable
FR = Friable
FI = Firm
VFI = Very Firm
EFI = Extremely Firm
SR = Slightly Rigid
R = Rigid
VR = Very Rigid

SAR (gpd/ft^2)

See Arizona Administrative Code(A.A.C.) R18-9-A312(D) for SAR value.

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ATTACHMENT 2 – PERCOLATION TEST DATASHEET

Land surface at the top of the Test Hole is (please check one):
☐ Undisturbed Native Soil ☐ Cut Surface ☐ Fill Surface

☐ Other (describe) _____

Test Hole Number/Location _____ Date Tested _____

Soil data from Test Hole:

Depth (inches)	Soil Texture	Soil Structure	Soil Consistence	Mottles	% Rock

Depth of bottom of test hole below land surface (bls) indicated above _____ inches.

Depth to groundwater (feet bls): **PLEASE REPORT IN ITEM 7.G**

Diameter of round test hole _____ inches or cross-section of square hole _____ inches.

Test Hole cross section

☐ Round, _____ inches in diameter ☐ Square, _____ inch sides

Test Hole Presoaking:

Run #	Start Date (M:D:Y)	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time (min)	Initial Depth (inches)

Test Hole Percolation Test:

Run #	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time, T_i (min)	Measured Water Drop (inches)	Percolation Rate, P_i (min/in.)	$(T_i + T_{i+1})/2$ ΔT(min)	$P_{i+1} - P_i$ ΔP	$\Delta P / \Delta T$
						N/A	N/A	N/A

Stabilized Percolation Rate (from Graph) _____inches

Person who performed the test:

Name: _____

Company: _____

Address: _____

Phone _____ Fax _____

Email _____

Professional Seal

ATTACHMENT 3 – SEEPAGE PIT TEST DATASHEET

Test Hole Location _____

Test Hole Number _____

Date Report Prepared _____

Depth of Hole Bottom below land surface (feet) _____

Diameter of Test Hole (inches) _____

Depth to Groundwater below pit terminus (feet) **PLEASE REPORT IN ITEM 7.G**

Soil data from test hole:

Depth (feet)	Soil Lithology

Presoaking:

Run #	Start Date (M:D:Y)	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time (min)	Initial Water Surface Depth Below Ground Surface (inches)

Total gallons of water added to the Test Hole for presoak _____ gallons.

Seepage Pit Test:

Run #	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time, T_i (min)	Measured Water Drop (inches)	Percolation Rate, P_i (min/in.)	$(P_{i+1} - P_i)/P_i * 100\%$

Stabilized Percolation Rate (from Graph) _____inches

Professional Seal

Person who performed the test:

Name: _____

Company: _____

Address: _____

Phone _____ Fax _____

Email _____

ATTACHMENT 4 – OTHER INFORMATION

Other information pertinent to this Site Investigation Report: Please specify the Report Item and/or Attachment.

Continued on pages _____ through _____

Prepared by: _____

Date Prepared: _____

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